SYNTHESIS AND MODELING PROJECT OF THE U. S. JOINT GLOBAL OCEAN FLUX STUDY:

The Role of Oceanic Processes in the Global Carbon Cycle

Program Announcement

NSF 99-124

DIRECTORATE FOR GEOSCIENCES
DIVISION OF OCEAN SCIENCES

DEADLINE DATE: AUGUST 23, 1999

NATIONAL SCIENCE FOUNDATION

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants for research and education in the sciences, mathematics and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Web site at:

http://www.nsf.gov

Location:	4201 Wilson Blvd. Arlington, VA 22230
For General Information (NSF Information Center):	(703) 306-1234
TDD (for the hearing-impaired):	(703) 306-0090
To Order Publications or Forms:	
Send an e-mail to:	pubs@nsf.gov
or telephone:	(301) 947-2722
To Locate NSF Employees:	(703) 306-1234

SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Name: Synthesis and Modeling Project of the U.S. Joint Global Ocean Flux Study: The Role of Oceanic Processes in the Global Carbon Cycle

Short Description/Synopsis of Program:

The international Joint Global Ocean Flux Study and its American component, U.S.JGOFS, were organized in the mid-1980's with the twin goals of (1) determining and understanding the processes controlling time-varying fluxes of carbon and associated biogenic elements in the ocean and (2) predicting the response of marine biogeochemical processes to climate change. Biogeochemical process studies in several ocean regions, a global ocean carbon dioxide survey, and two sets of ocean time-series observations have produced massive and unprecedented sets of synoptic data that require synthesis into a unified picture of the marine carbon cycle in the context of global climate. This Announcement solicits research proposals to synthesize results from these efforts into a set of models that can be used for prediction.

Cognizant Program Officers: Dr. Donald L. Rice, Program Director, Chemical Oceanography Program, Room 725, Division of Ocean Sciences, telephone 703-306-1589, email: drice@nsf.gov. Dr. Phillip R. Taylor, Program Director, Biological Oceanography Program, Room 725, Division of Ocean Sciences, telephone 703-306-1587, email: prtaylor@nsf.gov.

Applicable Catalog of Federal Domestic Assistance (CFDA) No.: 47.050 — Geosciences

ELIGIBILITY

- Limitation on the categories of organizations that are eligible to submit proposals:

  Proposals may be submitted by universities in support of individual investigators or small groups.

- PI eligibility limitations: **None.**

- Limitation on the number of proposals that may be submitted by an organization: **None.**

AWARD INFORMATION

- Type of award anticipated: **Standard Grant**

- Number of awards anticipated in FY 00: **10-20 awards**

- Amount of funds available: **Approximately $4 million will be available for this initiative in FY 2000**

- Anticipated date of award: **February, 2000**

PROPOSAL PREPARATION & SUBMISSION INSTRUCTIONS

- **Proposal Preparation Instructions**
  - Letter of Intent requirements: **None**
  - Preproposal requirements: **None**
  - Proposal preparation instructions: **Standard NSF Grant Proposal Guide instructions**
  - Supplemental proposal preparation instructions: **None**
  - Deviations from standard (GPG) proposal preparation instructions: **None**
- **Budgetary Information**
  - Cost sharing/matching requirements: **None**
  - Indirect cost (F&A) limitations: **None**
  - Other budgetary limitations: **None**
- **FastLane Requirements**
  - FastLane proposal preparation requirements: **FastLane use strongly encouraged**
  - FastLane point of contact: **Candace Binkley, 703-306-7223, email: kbinkley@nsf.gov.**
- **Deadline/Target Dates**
  - Full Proposal Deadline **5:00 PM, ET, August 23, 1999 (Paper)**
    5:00 PM local time, August 23, 1999 (FastLane)

PROPOSAL REVIEW INFORMATION

- Merit Review Criteria: **Standard National Science Board approved criteria**

AWARD ADMINISTRATION INFORMATION

- Grant Award Conditions: **GC-1 or FDP III**
- Special grant conditions anticipated: **None anticipated**
- Special reporting requirements anticipated: **None**

INTRODUCTION

The Chemical Oceanography and Biological Oceanography Programs in the Division of Ocean Sciences announce a third call for research proposals to participate in the continuation of the Synthesis and Modeling Project (SMP) of the U.S. Joint Global Ocean Flux Study (U.S.JGOFS). As the last major activity of U.S.JGOFS, the SMP is open to U.S. scientists without past involvement in U.S.JGOFS as well as past and present U.S.JGOFS investigators. Details of the scientific and implementation framework for the SMP are given in the *U.S.JGOFS Science Plan for Synthesis and Modeling*, which is available from the U.S.JGOFS Planning and Implementation Office, Woods Hole Oceanographic Institution, Woods Hole, MA 02543. The *Plan* is also available by Internet via the U.S.JGOFS Office homepage at http://www1.whoi.edu/jgofs.html, which is also a valuable informational resource for tracking current and future U.S.JGOFS activities.

PROGRAM DESCRIPTION

The international Joint Global Ocean Flux Study was organized in the mid-1980's with the twin goals of (1) determining and understanding the processes controlling time-varying fluxes of carbon and associated biogenic elements in the ocean and (2) predicting the response of marine biogeochemical processes to climate change. Organized as part of the U.S. Global Change Research Program, the U.S.JGOFS program has contributed to these goals through three types of studies:

- Regional processes studies designed to estimate geochemical inventories, fluxes, and process kinetics of direct relevance to oceanic carbon cycling. The North Atlantic Bloom Experiment (NABE), The Equatorial Pacific Process Study (EqPac), and the Arabian Sea Process Study (ASPS) have been concluded, although scholarly production is continuing. The field program of the Southern Ocean Process Study (AESOPS) is scheduled to end in CY 1998.

- Oceanic time-series stations for the study of annual to decadal phenomena relevant to the marine carbon cycle and to sea-air exchange of carbon dioxide. The Hawaii Ocean Time Series (HOT) and the Bermuda-Atlantic Time Series (BATS) have been operating continuously since the start of U.S.JGOFS. Work at BATS has also included bio-optical research sponsored by NASA.

- A global marine carbon dioxide survey, co-sponsored by DOE and NOAA, to achieve improved estimates of sea-air CO2 exchange and of anthropogenic CO2 inventories.

The central goal of the SMP is to synthesize results from these efforts into a set of models that can be used for prediction. Model development should be driven by data (including satellite data) and synthesis efforts should be undertaken with an eye to their utility for model development.

To help structure an approach to this central goal, the U.S.JGOFS Steering Committee has organized the SMP conceptually around three elements: (1) global and regional balances of carbon and related biologically active substances; (2) local carbon balances and their mechanistic controls; and (3) extrapolation and prediction. These elements are not stand-alone enterprises, but rather heuristics or points of departure that should support and point to one another.

1. Global and Regional Carbon Balances

The U.S.JGOFS database affords an unprecedented opportunity to develop regional and global mass balances for carbon and other substances with cycles linked with the carbon cycle. The global marine carbon dioxide survey offers a particularly attractive dataset for study. But how does one utilize the survey data, which have extensive

spatial coverage but are not synoptic? How can global models be related to the observational databases generated by process studies and the oceanic time-series stations? How do anthropogenic inputs affect -- and how can they be *expected* to affect -- global carbon inventories and mass fluxes? These are only a few of the global-scale questions and challenges that need to be addressed in the SMP.

2. Local Carbon Balances and Mechanisms

Modeling the major mechanisms responsible for observed local inventories and fluxes of carbon and other substances is essential to the development of larger-scale models. There is therefore a need for mass balances for carbon and other associated substances at the process study and time-series sites as well as quantification of the principal controlling mechanisms. How are these mechanisms expressed spatially and temporally? How can these mechanisms and their interactions be parameterized to facilitate regional and global synthesis and modeling? Experience to date suggests that understanding the interdependencies of such mechanisms often, if not generally, requires resolution at the levels of production and export in the euphotic zone, transport and remineralization in the deep ocean, and diagenetic transformation in seafloor sediments.

3. Extrapolation and Prediction

To achieve the original objectives of JGOFS, observations made at small spatial and temporal scales must be scaled upwards to regional/global spatial scales and to seasonal/annual time scales – and beyond. This element of the SMP will draw upon other components to understand and predict aspects of the cycling of carbon and other biologically-active substances in the past, present, and future ocean.

Major SMP Research Trajectories

Realizing the research goals of the SMP and, more generally, the fundamental objectives of U.S.JGOFS will require the coordinated efforts of a wide variety of investigators, both modelers and observationalists. The organization of principal investigators and proposals by teams and the continual interaction of teams with one another will be vital to the success of the SMP.

Nevertheless, individual investigators or teams should focus their efforts at the proposal level on one or more of the defined objectives of the SMP as described above. In particular, at this stage of the SMP there is special need for innovative investigations directed toward the following:

- Synthesis of observations of primary production, new production, and export production, both particulate and dissolved.
- The mechanisms and rates of mid- to deep-water particle flux and reminderalization as well as sediment diagenesis.
- Controls on and distributions of the production, transport, and remineralization of calcium carbonate and silica.
- Biogeochemical effects of trace metal cycling.
- Spatial and temporal extrapolation of estimates of bigeochemical fluxes (e.g., export production) from local to basin and global scales.
- Development, evaluation, and incorporation of mechanistically based biological models for simulation of the global carbon cycle.

- Synthesis and modeling studies of the Arabian Sea, Southern Ocean, North Atlantic, ocean margins (with respect to their role in basin- to global-scale carbon cycling), and the set of U.S. and international ocean times-series stations.

ELIGIBILITY

Proposals may be submitted by universities in support of individual investigators or small groups. Synergistic collaboration among researchers and collaboration or partnerships with industry or government laboratories is encouraged when appropriate. Group and collaborative proposals involving more than one institution must be submitted as a single administrative package from one of the institutions involved. Due to the limited availability of funds, prospective applicants are strongly urged to contact one of the program officers]listed at the end of this document for guidance. Foreign institutions are not eligible for funding through this announcement.

AWARD INFORMATION

Under this announcement, proposals may be funded in a wide variety of award sizes and durations. NSF expects to fund approximately 10 to 20 three-year research awards depending on the quality of submissions and the availability of funds. In exceptional cases, awards for up to five years may be considered if the justification and promise are compelling. Approximately $4 million will be available for this initiative in FY 1999. Anticipated date of awards: February, 2000.

PROPOSAL PREPARATION & SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions.

Proposals submitted in response to this program announcement should be prepared and submitted in accordance with the general guidelines contained in the *Grant Proposal Guide* (GPG), NSF 99-2. The complete text of the GPG (including electronic forms) is available electronically on the NSF Web site at: <http://www.nsf.gov/>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone 301.947.2722 or by e-mail from pubs@nsf.gov.

Proposers are reminded to identify the program announcement number (NSF 99-124) in the program announcement/solicitation block on the NSF Form 1207, *"Cover Sheet for Proposal to the National Science Foundation*." Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

Prior to proposal preparation, prospective investigators are strongly advised to acquaint themselves with the contents of the official science and implementation plan for the SMP: *U.S.JGOFS Science Plan for Synthesis and Modeling*. Copies are available by mail from U.S.JGOFS Office (see address above) or electronically via the Internet from the U.S.JGOFS Office homepage at http://www1.whoi.edu/jgofs.html

The proposal should *explicitly* identify one or more of the five major SMP components above as the primary research focus. There should be a full scientific justification for the research and not simply a reiteration of justifications laid out in the SMP science and implementation plan.

Each proposal must include a plan for documentation, archiving, and dissemination of data and project results. All funded participants must adhere to data management policies applying to recipients of federal funding in the geosciences. Additionally, participants must adhere to data submission schedules and data management requirements established by the U.S.JGOFS Steering Committee, acting on behalf of the U.S.JGOFS Program. For details on the latter, please consult the U.S.JGOFS Office homepage on the World-Wide Web.

Because of page limitations (*GPG*, page 7, Project Description), individual proposals with overly complex structure and large numbers of investigators are discouraged. Proposals should be written to allow adequate review of the details of goals and objectives, conceptual framework, methodological approaches, and plans for integration with other likely projects.

As discussed in the *U.S.JGOFS Science Plan*, both formal and informal collaboration between modelers and observationalists is encouraged, but not required, in the development of individual proposals. Although formation of partnerships and team building are not required at the proposal submission stage, it is expected that all investigators participating in the SMP will establish such linkages in due course.

Investigators intending to submit proposals are also requested to submit a brief statement of scope to:

Synthesis and Modeling Project
U.S.JGOFS Office
Woods Hole Oceanographic Institution
Woods Hole, MA 02543
Email: hlivingston@whoi.edu
FAX: 508-457-2161

B. Budgetary Information

None.

C. <u>Proposal Due Dates</u>.

Electronic proposal submission via the NSF FastLane system is strongly encouraged. For electronic submission, the proposal **MUST** be submitted by 5:00 PM, local time, August 23, 1999. Copies of the signed proposal cover sheet must be submitted in accordance with the instructions identified below.

If FastLane submission is not possible, **20 paper copies** of the proposal, including one copy with original institutional signatures, **MUST** be received by 5:00 PM, ET, August 23, 1999. Copies of the proposal must be made and submitted to NSF according to the normal procedures for paper proposals identified in the GPG.

Submission of Signed Cover Sheets. For proposals submitted electronically via FastLane, the signed proposal Cover Sheet (NSF Form 1207) should be forwarded to the following address and received by NSF by August 30, 1999:

National Science Foundation
DIS-FastLane Cover Sheet
4201 Wilson Blvd.
Arlington, VA 22230

A proposal may not be processed until the complete proposal (including signed Cover Sheet) has been received by NSF.

D. <u>FastLane Requirements</u>.

The NSF FastLane system is available for electronic preparation and submission of a proposal through the Web at the FastLane Web site at <http://www.fastlane.nsf.gov>. The Sponsored Research Office (SRO or equivalent) must provide a FastLane Personal Identification Number (PIN) to each Principal Investigator (PI) to gain access to the FastLane "Proposal Preparation" application. PIs that have not submitted a proposal to NSF in the past must contact

their SRO to be added to the NSF PI database. This should be done as soon as the decision to prepare a proposal is made.

In order to use NSF FastLane to prepare and submit a proposal, the following are required:

Browser (must support multiple buttons and file upload)

- Netscape 3.0 or greater
- Microsoft Internet Explorer 4.0 or greater

PDF Reader (needed to view/print forms)
- Adobe Reader 3.0 or greater

PDF Generator (needed to create project description)
- Adobe Acrobat 3.01 or greater
- Aladdin Ghostscript 5.10 or greater

A list of registered institutions and the FastLane registration form are located on the FastLane Web page.

For paper submission of proposals, the delivery address **must clearly identify the NSF announcement or solicitation number** under which the proposal is being submitted.

PROPOSAL REVIEW INFORMATION

A. . Merit Review Criteria.

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority serving institutions, adjacent disciplines to that principally addressed in the proposal, etc.

Proposals will be reviewed against the following general merit review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Integration of Research and Education

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learner perspectives. PIs should address this issue in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria. NSF staff will give it careful consideration in making funding decisions.

Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- are essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports. PIs should address this issue in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria. NSF staff will give it careful consideration in making funding decisions.

B. Merit Review Process.

Most of the proposals submitted to NSF are reviewed by mail review, panel review, or some combination of mail and panel review. Proposals submitted in response to this announcement will be reviewed by panel review only.

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Reviewers will be asked to formulate a recommendation to either support or decline each proposal. A program officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation. In most cases, proposers will be contacted by the program officer after his or her recommendation to award or decline funding has been approved by his or her supervisor, the division director. This informal notification is not a guarantee of an eventual award. NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals in this category. In those cases where a proposal is being considered for joint funding by separate divisions, directorates, or agencies, NSF will be able to inform applicants within nine months in 95 percent of proposals. The time interval begins on the proposal deadline or target date or from the date of receipt, if deadlines or target dates are not used by the program. The interval ends when the division director accepts the program officer's recommendation.

In all cases, after final programmatic approval has been obtained, award recommendations are then forwarded to the Division of Grants and Agreements for review of business, financial and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with an NSF program officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants Officer does so at its own risk.

AWARD ADMINISTRATION INFORMATION

A. Notification of the Award.

Notification of the award is made ***to the submitting organization*** by a Grants Officer in the Division of Grants and Agreements (DGA). Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator.

B. Grant Award Conditions.

An NSF grant consists of: (1) the award letter, which includes any special provisions applicable to the grant and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable grant conditions, such as Grant General Conditions (NSF GC-1)* or Federal Demonstration Partnership Phase III (FDP) Terms and Conditions* and (5) any NSF brochure, program guide, announcement or other NSF issuance that may be incorporated by reference in the award letter. Electronic mail notification is the preferred way to transmit NSF grants to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

***** These documents may be accessed electronically on NSF's Web site at: <http://www.nsf.gov/>. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone 301.947.2722 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, (NSF 95-26) available electronically on the NSF Web site. The GPM also is available in paper copy by subscription from the Superintendent of Documents, Government Printing Office, Washington, DC 20402. The GPM may be ordered through the GPO Web site at: <http://www.gpo.gov>.

C. Reporting Requirements.

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after expiration of a grant, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented a new electronic project reporting system, available through FastLane, which permits electronic submission and updating of project reports, including information on: project participants (individual and organizational); activities and findings; publications; and, other specific products and contributions. Reports will continue to be required annually and after the expiration of the grant, but PIs will not need to re-enter information previously provided, either with the proposal or in earlier updates using the electronic system.

Effective October 1, 1998, PIs are required to use the new reporting format for annual and final project reports. PIs are strongly encouraged to submit reports electronically via FastLane. For those PIs who cannot access FastLane, paper copies of the new report formats may be obtained from the NSF Clearinghouse as specified above. NSF expects to require electronic submission of all annual and final project reports via FastLane beginning in October, 1999.

D. New Awardee Information.

If the submitting organization has never received an NSF award, it is recommended that the organization's appropriate administrative officials become familiar with the policies and procedures in the NSF *Grant Policy Manual* which are applicable to most NSF awards. The "Prospective New Awardee Guide" (NSF 97-100) includes information on: Administration and Management Information; Accounting System Requirements and Auditing Information; and Payments to Organizations with Awards. This information will assist an organization in preparing documents that NSF requires to conduct administrative and financial reviews of an organization. The guide also serves as a means of highlighting the accountability requirements associated with Federal awards. This document is available electronically on NSF's Web site at: <http://www.nsf.gov/cgi-bin/getpub?nsf97100>.

CONTACTS FOR ADDITIONAL INFORMATION

General inquiries should be made to one of the cognizant program officers of the U.S.JGOFS Program: Dr. Donald L. Rice, Program Director, Chemical Oceanography Program, Room 725, Division of Ocean Sciences, telephone 703-306-1589, email: drice@nsf.gov. Dr. Phillip R. Taylor, Program Director, Biological Oceanography Program, Room 725, Division of Ocean Sciences, telephone 703-306-1587, email: prtaylor@nsf.gov.

For questions related to use of FastLane, contact: Candace Binkley, telephone 703-306-7223, email: kbinkley@nsf.gov.

OTHER PROGRAMS OF INTEREST

The NSF Guide to Programs is a compilation of funding opportunities for research and education in science, mathematics, and engineering. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter. Beginning in fiscal year 1999, the NSF Guide to Programs only will be available electronically, at <http://www.nsf.gov/cgi-bin/getpub?gp>. Many NSF programs offer announcements concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices listed in Appendix A of the GPG.

Any changes in NSF's fiscal year programs occurring after press time for the Guide to Programs will be announced in the NSF E-Bulletin, available electronically on the NSF Web site at: <http://www.nsf.gov/home/ebulletin/>. The direct URL for recent issues of the Bulletin is Subscribers can also sign up for NSF's Custom News Service to find out what funding opportunities are available.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Grantees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities, and persons with disabilities to compete fully in its programs. In accordance with federal statutes, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement or contact the program coordinator at (703) 306-1636.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation regarding NSF programs, employment, or general information. TDD may be accessed at (703) 306-0090 or through FIRS on 1-800-877-8339.

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Reports Clearance Officer; Information Dissemination Branch, DAS; National Science Foundation; Arlington, VA 22230.

YEAR 2000 REMINDER

In accordance with Important Notice No. 120 dated June 27, 1997, Subject: Year 2000 Computer Problem, NSF awardees are reminded of their responsibility to take appropriate actions to ensure that the NSF activity being supported is not adversely affected by the Year 2000 problem. Potentially affected items include: computer systems, databases, and equipment. The National Science Foundation should be notified if an awardee concludes that the Year 2000 will have a significant impact on its ability to carry out an NSF funded activity. Information concerning Year 2000 activities can be found on the NSF web site at http://www.nsf.gov/oirm/y2k/start.ht

Catalogue of Federal Domestic Assistance (CFDA) No.: 47.050 – Geosciences
OMB No.: 3145-0058 **NSF 99-124 (Replaces NSF 98-133)** ***Electronic Dissemination Only***